PAGES 25-28.

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Santos .·. Dumont's .·. Airship

Whatever else Alberto Santos-Dumont has done, he has, in Paris at least, added ballooning to the list of sports. He has also done something else, the inevitable, of course—he has written a book. It is a very entertaining volume, by the way, which the Century Company has published, and it is none the less interesting because he has taken his readers into his confidence and let them know what a marvelous fellow he is. With the unconscious egotism of Robinson Crusoe, he makes the reader acquainted step by step with the story of his progress. Thus he charms him with recounting "my first balloon ascent," thrills them with his chapter on "My Brazil, smallest of spherical balloons," and makes him grateful for the chapter entitled "I yield to the steerable balloon idea."

Santos-Dumont is charming. One could listen to him for hours, especially when he recounts his introductory fable, showing how at an early age his thoughts were constantly upon the subject of aerial navigation, although he had only once seen a balloon, and toward the close, where he relates his offer of assistance to the French military authorities unless they should be engaged in a struggle with the United States or the other American republics.

His winning of the Deutsch prize on October 19, 1901, by sailing the course from the Aero Club's d'Aerostation to the Eiffel Tower and return—about seven miles—within thirty minutes, is now a matter of history, so it is unnecessary to relate his attempts. Incidentally, it might be remarked, however, M. Santos-Dumont explains the reason for wearing what has been called his "bracelet." During one of his flights he met with an accident, and his airship fell in the park of M. Edmond Rothschild. This is near the house of the Princess Isabel, daughter of the late Dom Pedro, Emperor of Brazil. This lady saw his plight, and a few days later sent him a medal of St. Benedict to protect him in time of danger. This little medal he attached to a gold chain, and clasped it around one of his wrists. One week later his airship struck a housetop and burst, and he saved himself by climbing upon a convenient window sill.

M. Santos-Dumont has built nine airships in all, and three or four are in condition in his balloon quarters for almost instant use. Having found a lack of competitors for the various races arranged to show the value of his airships, the young aeronaut decided to build a pleasure craft, which he calls his "No. 9, the little runabout."

"Once," says he, "I was enamored of high power petroleum automobiles; they can go at express train speed to any part of Europe, finding fuel at any village. 'I can go to Moscow or Lisbon,' I said to myself. But when I discovered I did not want to go to Moscow or Lisbon, the small and handy electric runabout in which I do my errands about Paris and the Bois proved more satisfactory.

"Speaking from the standpoint of my pleasure and convenience as a Parisian, my airship experience has been similar. When the balloon and motor of my 60-horse power No. 7 were completed, I said to myself: 'I can race any airship that is likely to be built.' But when I found that, in spite of the forfeits I paid into the Aero Club's treasury, there was no one ready to race with me, I determined to build a small airship runabout for my pleasure and convenience only. In it I would pass the time while waiting for the future to bring forth competitors worthy of my race craft.

"So I built my 'No. 9,' the smallest of possible dirigibles, yet very practical, indeed. As originally constructed, this balloon's capacity was but 7,770 cubic feet, permitting me to take less than sixty-six pounds of ballast; and thus I navigated it for weeks without inconvenience. Even when I enlarged its balloon to 9,218 cubic feet, the balloon of my 'No. 6,' in which I won the Deutsch prize, would have made almost three of it, while that of my 'Omnibus' is fully eight times its size. As I have already stated, its three horse power Clement motor weighs but 26½ pounds. With such a motor one cannot expect great speed; nevertheless, this little handy runabout takes me over the Bois at between twelve and fifteen miles per hour, and this notwithstanding its egg-shaped form, which would seemingly be little calculated for cutting the air. Indeed, to make it respond promptly to the rudder, I drive it thick end first.

"I have said that, as it was originally proportioned, the baloon of this smallest of possible dirigibles permitted me to take up less than sixty-six pounds of ballast. As now enlarged, its lifting power is greater; but when account is taken of my own weight and the weight of keel, motor, screw, and machinery, the whole system becomes neither lighter nor heavier than the surrounding atmosphere when I have loaded it with 132 pounds of ballast. And it is just in this connection that it will be easiest to explain why I have called this little airship very practical. On Monday, June 29, 1903, I landed with it, on the grounds of the Aero Club, at Saint Cloud, in the midst of six inflated spherical balloons. After a short call I started off again.

"'Can we not give you some gas?' politely asked my fellow clubmen.

"'You saw me coming all the way from Neuilly,' I replied. 'Did I throw out any ballast?'

"'You threw out no ballast,' they admitted.

"'Then why should I be in need of gas?'

"As a matter of scientific curiosity, I may relate that I did not either lose or sacrifice a cubic foot of gas or a single pound of ballast that whole afternoon; nor has that experience been at all exceptional in the very practical little 'No. 9,' or even it its predecessors.

"After leaving my fellow-clubmen at Saint Cloud that afternoon I made a typically practical trip. To go from Neuilly Saint James to the Aero Club's grounds I had nearly passed the Seine. Now, crossing again, I made the cafe-restaurant of the Cascade, where I stopped for refreshments. It was by this time 5 p. m. Not wishing to return yet to my station, I crossed the Seine for a third time, and went in a straight course as close to the great fort of Mont Velerien as delicacy permitted. Then returning, I traversed the river once again, and came to earth in my own grounds at Neuilly.

"During the whole trip my greatest altitude was 346 feet. Taking into consideration that my guide rope hangs 132 feet below me and that the tops of the Bois trees extend up some seventy feet from the ground, this extreme altitude left me but 140 feet of clear space for vertical maneuvering.

"It was enough, and the proof of it is that I do not go higher on these trips of pleasure and experiment. Indeed, when I hear of dirigibles going up 1,300 feet in the air without some special justifying object, I am filled with amazement. As I have already explained, the place of the dirigible is, normally, in low altitudes and the idea is to guide-rope on a sufficiently low course to be left free from vertical maneuvering. It is not necessary to go to the plain of La Blauce. One can guide-rope even in the center of Paris, if one goes about it at the proper moment. I have done it."

M. Santos-Dumont tells all about these experiences and discusses them with the authority of a man who has built ten airships. He refers to the fact that he is the Poo-Bah of the airship. "Throughout," he explains, "I had been inventor, patron, manufacturer, amateur, mechanician, and airship captain, all united!" Certainly a large, comprehensive order, but he filled it without wilting a collar.

With the same delightful confidence with which the author of "My Airships" has in everything he does, he tells of the establishment of "the first airship station of the future, capable of housing seven airships, all inflated and prepared to navigate at an instant's notice!" Yet, already, he finds it too small and sighs: "What a small and hampered place it is, compared with the great, highly organized stations which the future must produce for itself with their high-placed and spacious landing stages to which airships will descend with complete safety and convenience, like great birds that seek nests on flat rocks." To M. Santos-Dumont the future is always at hand, yet he likes to picture what is in store for us.

These stations, he ventures to predict, are likely to be common in the future. They are to be fitted with tracks on which great airships will be pulled in and out by their guide ropes without loss of time or the aid of a dozen or more men. "Their observation towers," he continues, "will serve for judges' timing stations in aerial races; fitted with wireless telegraph apparatus, they may be able to communicate with distant goals and, perhaps, even with airships in motion. Attached to their airship stations, there will be gas generating plants. There may be a casemated workshop for the testing of motors. There will certainly be sleeping rooms for experimenters who desire to make an early start and profit by the calm dawn. It is quite probable that there will also be balloon envelope workshops for repairs and changes—a carpenter shop and a machine shop, with intelligent and experienced workmen ready and able to seize an idea and execute it.

He describes his present station, where he houses his "fleet" of airships, as a great square tent, striped red and white, set in the midst of a vacant lot. Its tent-like appearance, he explains, is due to the fact that he was in a hurry to construct it. Inside it is fitted up as a great stable, for monsters of the air. The central stalls are thirty-one feet wide, 165 feet long, and forty-four and one-half feet high, affording room for the largest dirigibles without permitting them to come into contact with each other.

COST $500 TO FILL.

Here he keeps his "No. 7," which he calls his "racing airship," which costs $400 to fill with hydrogen; his "No. 9, the little runabout," and his "No. 10," which has been called "The Omnibus." "Its gas capacity," he states, "of nearly eighty thousand cubic feet, makes its balloon greater in size and lifting power than even the racing No. 7; and should I, indeed, desire at any time to shift to it the latter's keel, all furnished with the racing motor and machinery, I might combine a very swift aircraft capable of carrying myself, several aids, a large supply of both petroleum and ballast, not to speak of war munitions.

"The prime purpose of my 'No. 10,' however, is well indicated in its name, 'The Omnibus.' Its keel, or rather keels, as I have fashioned them is double that is to say, hanging underneath its usual keel, in which my basket is situated, there is a passenger keel that holds similar baskets and a smaller one for my aid. Each passenger basket is large enough to carry four passengers; and it is to carry such passengers that 'The Omnibus' has been constructed.

"Indeed, after mature reflection, it seemed to me that this must be the most practical and rapid way to popularize aerial navigation. In many other airships I have shown that it is possible to mount and travel through the air on a prescribed course with no greater danger than one risks in any racing automobile. In 'The Omnibus' I shall demonstrate to the world that there are very many men and women possessed of sufficient confidence in the aerial idea to mount with me as passengers in the first of the air omnibuses of the future."

M. Santos-Dumont expresses a belief that the dirigible balloon should be approached by the amateur through the spherical gas bag. "I do not believe," he says, "that, without previous study and experience with a spherical balloon, a man can be capable of succeeding with an elongated dirigible balloon, whose handling is so much more delicate. Before attempting to direct an airship it is necessary to have learned in an ordinary balloon the conditions of the atmosphere medium, to have become acquainted with the caprices of the wind, and to have gone thoroughly into the difficulties of the ballast problem from the triple point of view of starting, of equilibrium in air, and of landing at the end of the trip.

AN INDISPENSABLE PRELIMINARY.

"To have been one's self the captain of an ordinary balloon at the very least a dozen times seems to me an indispensable preliminary to acquiring an exact notion of the requisits for constructing and handling an elongated balloon furnished with its motor and propellor.

"Naturally I am filled with amazement when I see inventors who have never set foot in the basket drawing up on paper—and even executing in whole or in part—fantastic airships whose balloons are to have a capacity of thousands of cubic meters loaded down with enormous motors, which they do not succeed in raising from the ground, and furnished with machinery so complicated that nothing works. Such inventors are afraid of nothing, because they have no idea of the difficulties of the problem. Had they previously journeyed through the air at the wind's will, and amid all the disturbing influences of atmosphere phenomena, they would understand that a dirigible balloon, to be practical, requires, first of all, to have the utmost extreme of simplicity in all its mechanism.

THE FORFEIT OF RASHNESS.

"Some of the unhappy constructors who have paid with their lives the forfeit of their rashness had never made a single responsible ascent as captain of the spherical balloon. And the majority of their emulators, now so devotedly laboring, are in the same inexperienced condition. This is my explanation of their lack of success. They are in the condition in which the first-comer would find himself were he to agree to build and steer a transatlantic liner without having ever quitted land or set foot in a boat?

As so few persons have had the experience of ballooning, especially with the dirigible, it is interesting to listen while M. Santos-Dumont describes an air flight.

"My first impression of aerial navigation was, I confess, surprise to feel the airship going straight ahead. It was astonishing to feel the wind in my face. In spherical ballooning we go with the wind and do not feel it. True, in rising and descending, the spherical balloonist feels the friction of the atmosphere, and the vertical oscillation makes the flag flutter, but in the horizontal movement the ordinary balloon seems to stand still while the earth flies past under it.

AS THE SHIP PLOWS AHEAD.

"As my airship plowed ahead, the wind struck my face and fluttered my coat as on the deck of a transatlantic liner, though in other respects it will be more accurate to liken aerial to river navigation with a steamboat. It is not like sail navigation, and all talk about 'tacking' is meaningless. If there is any wind at all, it is in a given direction, so that the analogy with a river current is complete. When there is no wind at all, we may liken it to the navigation of a smooth lake or pond. It will be well to understand this matter.

"Suppose that my motor and propeller push me through the air at the rate of twenty miles an hour. I am in the position of a steamboat captain, whose propeller is driving him up or down the river at the rate of twenty miles an hour. Imagine the current to be ten miles an hour. If he navigates against the current, he accomplishes ten miles an hour with respect to the shore, though he has been traveling at the rate of twenty miles an hour through the water. If he goes with the current, he accomplishes thirty miles an hour with respect to the shore, though he has not been going any faster through the water. This is one of the reasons why it is so difficult to estimate the speed of an airship.

BIRDS DO THE SAME THING.

"It is also the reason why airship captains will always prefer to navigate for their own pleasure in calm weather, and, when they find an air current against them, will steer obliquely upward or downward to get out of it. Birds do the same thing. The sailing yatchman whistles for a fair breeze, without which he can do nothing; but the river steamboat captain will always hub the shore to avoid the freshet, and will time his descent of the river by the outgoing rather than the incoming tide. We airshipmen are steamboat captains and not sailing yachtsmen."

In his chapter, entitled "I yield to the steerable balloon idea," the author tells of his conversion. It came while he was being tossed about by the winds in a spherical balloon, the guide-rope of which had become wrapt around a tree. He decided to build a cylindrical balloon, long enough and thin enough to cut the air. He had a little tricycle motor and resolved to use it. Its light weight and simplicity, he states, are responsible for his trials. "I started from the principle; to make any kind of success, it would be necessary to economize weight and so comply with the pecuniary, as well as the mechanical conditions of the problem. Nowadays I build airships in a large way. I am in it as a kind of life-work. Then I was but a half-decided beginner, unwilling to spend large sums of money in a doubtful project.

AN ELONGATED BALLOON.

"Therefore, I resolved to build an elongated balloon, just large enough to raise, along with my own one hundred and ten pounds of weight, as much more as might be necessary for the basket, and rigging, motor, fuel, and absolutely indispensable ballast. In reality, I was building an airship to fit my little tricycle motor!"

This petroleum motor, after removing from it whatever was not strictly necessary, weight sixty-six pounds, and was of 3½ horse power. His automobiling experience has, he says, stood him in good stead. Should the time come in some future flight of mine when the motor of my airship threatens danger, I am convinced that my car will bear, and I shall heed the warning. This almost instructive faculty I owe only to experience. Having broken up the tricycle for the sake of its motor, I purchased at about this time an up-to-date six horse-power Panhard, with which I went from Paris to Nice in fifty-four hours, night and day, without stop; and had I not taken up dirigible ballooning, I must have become a road-racing automobile enthusiast, continually exchanging one type for another, continually in search of greater speed, keeping pace with the progress of the industry, as so many others do, to the glory of French mechanics and the new Parisian sporting spirit."

TO GO FIFTY MILES AN HOUR.

As is well known, the spherical balloon moves with the wind, and goes no faster, with the dirigible speed comes from its motor. In his flights over the Mediterranean in his "No. 6," M. Santos-Dumont found his balloon could safely stand a speed of twenty-seven miles per hour without giving the slightest hint of strain. He claims that "No. 7," his racing machine, may be driven as fast, say, about fifty miles per hour.—Philadelphia Ledger.

CAN YOU LOVE BUT ONCE?

It may be safely asserted that no one, whether man or woman, ever experiences a grand passion more than once in a lifetime. Indeed there are many, perhaps the great majority of both sexes, who never know what it is to be really, desperately in love, to be carried away, lifted out of themselves, by the force of a passion which is stronger than anything else on earth, a power which fuses men as heat does iron, changing their very natures and transforming them.

There are many varieties of love, even of that which is genuine, and all of these are scarcely to be classed as grand passions. With most people, fortunately for themselves and for others, love, however, true and steadfast, is excepting during the trying period of doubt and anxiety as to its return, comparatively calm and reasonable. Transports are out of fashion nowadays, romances and sentiment are at a heavy discount, and open manifestation of strong feeling of any kind is considered bad form in good society. Love, when he appears in public, is expected to show himself clothed and in his right mind.

Poets and novilyists of the old school were wont to aver and maintain that a grand passion could be felt only in youth; that as the first fruits are best, the first blossoms of a plant fairest, so young love is strongest and most vigorous.

Experience, on the contrary, goes to prove that youth has no monopoly of ardent affection. A man may fall in and out of a dozen fancies, imagining, perhaps, that each one as it comes is the real thing, to find himself at last in the real thing, to find himself at last in the grasp of a feeling which dominates all his being with a force which may be incomprehensible, but which is not to be resisted. Indeed, for the majority of men and women the great love of life comes after more than one preliminary passage at love-making. It would seem only natural that so strong a passion should develop best in maturity, when the heart and mind have been enlarged by experience, and if the mature love lack something of the undisciplined fervor of one's "salad days," it will, in all likelihood, go deeper and last longer, even unto death.

As one of Castle's heroes says: "'Tis easily well to laugh at love and play at love, but when love comes in earnest it takes a man, as it were, by the throat and it's no joke." It may last and it may not, for love, like all else on earth, may die, but such love as this comes only once in any one's life. We like sincerely, we cherish, we are, perhaps, truly fond of more than one person, but the light which illumines the world with its glory shines for none of us more than once. And it, while it lasts, those to whom it is vouchsafed are able to kindle therewith the fire of constant affection on the hearth of home, happiness folds her wings, and thenceforth abides content at that fireside.

A grand passion unfailingly leaves ineradicable traces behind it. He or she who has once felt its power is never again the same as before. "The heart that has truly loved never forgets," howwever bitterly it may object to remembrance. The love may be cruelly slain and pride may bury the dead out of sight, hiding carefully every sign of its grave, but the corpse is there, and its presence can not be forgotten.

When love leaves us his handmaidens often come in his stead. Affection, admiration and respect make a fair showing in life, and where one is not overexacting are sufficient to bestow much comfort and pleasure upon those who entertain them. Affection will burn cheerily and brightly long after the brilliant flame of love has died out, and will keep up a steady glow which to all, save the few, will be satisfying. Admiration is a gratifying tribute, which, properly offered, soothes self-love and appeals to the vanity from which few men and women are altogether free. Indeed, so gratifying is it that it is frequently mistaken for the true and ineffable of love. As for respect and esteem, even as they form the truest foundation whereon to erect a temple of love, so also are they the safest upon which to build a home.

There are many people wholly incapable of a grand passion. They love others after a fashion far removed from anything like an absorbing passion. Some there are who love themselves too devoutly ever to exalt another love above give back more or less in return for what they receive.—Cincinnati Commercial Tribune.

SCOUT'S ABILITY TO READ SIGNS.

"Scott Grover, a famous scout, who, it will be remembered, has been with Forsyth, afterward joined my command," said Colonel Carpenter, describing an experience of frontier warfare, as related by Dr. Cyrus Townsend Brady, in his story of Carpenter and His "Brunettes," in the June Pearson's. "He had married a Sioux woman and had live dfor years with the Indians before the outbreak of hostilities. He could speak their language and knew their ways and customs, and was perfectly trained in reading signs. It was interesting to see how he could read what the tracks meant, as if it had been a book. He could tell how long since the tracks were made, whether they were made by horses or ponies shod or unshod, how many were ridden, how many were driven, whether it was a war party or a party changing camp. If Indians stopped for the night, he could tell how many men or squaws were in the party, and to what tribe they belonged, from the shape of their moccasins, and many more details."